

REMARKS

The applicant's remarks, below, are each preceded by quotations of related comments of the examiner in small, boldfaced type.

The disclosure is objected to because of the following informalities:

On p.5, line 5: "5" should be changed to —4—; and "6" should be changed to —5—.

On p.5, line 6: "6" should be changed to —5—.

On p.7, line 16: "electrometrically" should be changed to —electromagnetically—.

On p.9, line 12: "122" should be changed to —124—; "132" should be changed to —134—; and "142" should be changed to —144—.

On p.9, line 13: "122" should be changed to —124—; "132" should be changed to —134—; and "142" should be changed to —144—.

Appropriate correction is required.

The specification has been amended.

Claims 25-26 are rejected under 35 U.S.C. 103(a) as being obvious over Marketkar et al. (US 2001/0024888 A1) in view of Ishibashi et al. (US 6,163464). **[Examiners Note:** the above-cited references have been previously made of record in the instant Application.

The applied reference (Marketkar et al.) has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention by another; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Without conceding the examiner's position, the applicant will file a terminal disclaimer.

As to Claim 25: Marketkar et al. (US 2001/0024868 A1) discloses mounting sockets 700 on a circuit board at locations of electromagnetic bus couplers (Figs. 1, 2, 13 and 14) using a force (lines 1-9 or paragraph [0102]) that *inherently* causes the viscous material—placed in the gap between surface 355 of the electromagnetic bus coupler 354 and surface 301 of the backplane (i.e., motherboard) circuit board 300 (Figs. 4 art Figs. 13—16; paragraph [0064])—to be squeezed and to flow to fill air gaps between sockets 700 and backplane circuit board 300. **Examiners remarks on the inherency.** The force from the sockets 700 comprises the force exerted on flexible electromagnetic coupler 354 against circuit board 300 by latches 734 and 744 (Figs. 13-16 and lines 5-6 of paragraph [0102]), and with the viscous material placed in the gap between surface 355 of coupler 354 and surface 301 of backplane circuit board 300 (paragraph [0064]), that force inherently causes the viscous material to be squeezed and to flow to fill air gaps between the sockets 700 and backplane circuit board 300. Marketkar et al. further discloses populating circuit board 300 with a memory controller—for electronically managing circuit boards 352 when circuit boards 352 are memory modules—coupled to a bus served by the electromagnetic bus couplers (Figs. 1, 2 and 13; paragraphs 100351 and 100461).

Marketkar et al. does not teach that any of devices 120, 130 and 140 of Figs. 1 and 2 (manifested in the memory module boards 352 of Figs. 13 and 14) mounted on backplane circuit board 300, or any other circuit components that may also be mounted to backplane circuit board 300, may be a processor coupled to the bus served by the electromagnetic bus couplers 354. Ishibashi et al. (US 6,163,464) discloses circuit boards 5a-f mounted to backplane board 1 through connectors 6a-f, wherein circuit boards 5a-f not only may include a memory board but also include a processor board (col.3: 29-31) for performing the data processing functions.

Since both Marketkar et al. and Ishibashi et al. disclose an electronic system wherein circuit boards that perform electronic functions are mounted to a backplane through connectors then including a processor board among the functional boards for performing the data processing functions, as taught by Ishibashi et al., would have been readily recognized in the pertinent art of Marketkar et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount various types of functional boards to the bus on the backplane board in the electronic system of Marketkar et al., including a processor board as taught by Ishibashi et al., coupled to the bus served by the electronic bus couplers in order to perform the data processing in the electronic system of Marketkar et al.

Claim 25 is patentable for at least the reason stated above.

As to Claim 26, modified Marketkar et al. further discloses that among the circuit boards 352 inserted into sockets 700 are memory modules (paragraphs [0035] and [0046]), which are art-recognized digital devices.

Claim 26 is patentable for at least the same reason as the claim from which it depends.

Claims 1-7, 9-24 and 27-31 have been allowed.

The following is an examiners statement of reasons for allowance:

As to Claims 1-7 and 9-15, patentability resides in the combination of: a connector configured for insertion and removal of a digital device, a first electromagnetic coupler being connected to at least one of the contacts of the connector, the connector comprising a rigid coupling element, and the first electromagnetic coupler being on a surface of the rigid coupling element, in further combination with the other limitations of base Claim 1:

Knight et al. (WO 00/72163 A1) discloses, in Figs. 14A,B,C,D, 15 and 16A,B, a flex or rigid-flex electromagnetic coupler to which a digital device is connected (all of p.17 and first paragraph of p.18). Knight et al. does not teach a connector configured for insertion and removal of a digital device and an electromagnetic coupler connected to contacts of that insertion/removal connection rather, the electromagnetic coupler, itself, serves as both connector and electromagnetic coupler (i.e., a digital device interface) to which the digital device is directly connected by unspecified means, wherein no teaching or suggestion is made of a distinct insertion/removal connector structure with contacts and an electromagnetic coupler connected to those contacts (p.17, last paragraph; p.18, line 11-p. 19, line 7).

Marketkar et al. (US 2001/0024888 A1) discloses, in Figs. 13-16: a socket connector 700 configured for insertion and removal of a digital device 352 having contacts 750 and 760 arranged to make electrical connection to conductors 581-584 on digital device 352; a flexible electromagnetic coupler 354 (paragraph [0090]) with coupler traces on surface for electromagnetically coupling the coupler traces on circuit board 300. The first electromagnetic coupler 354 is not connected to at least one of the contacts 750, 760 of the connector 700 (Figs. 14-16; paragraphs [0088]-[0090]).

As to Claims 16-20, patentability resides in sockets having rigid electromagnetic couplers, in combination with the other limitations of base Claim 16.

As to Claims 21-22, patentability resides in sockets having rigid electromagnetic couplers, in combination with the other limitations of base Claim 21.

As to Claims 23-24, patentability resides in coupling, at locations along the bus, the digital signals to sockets through rigid electromagnetic couplers, in combination with the other limitations of base Claim 23.

Williamson (US 6,111,476) discloses all the limitations of Claim 23 (col.3: 4—32) but does not teach the specific material composition or mechanical properties of the electromagnetic couplers 30A-N; i.e., does not teach that the electromagnetic couplers are rigid.

Williamson, in col. 1: 29-37, cites De Veer (US 3619504) who teaches a similar electromagnetic bus coupling system with electromagnetic couplers C1_C.4 (col.2: 50-51) but also does not teach the specific material composition or mechanical properties of the couplers C1-C4.

De Veer, in col. 2: 50-54 teaches that couplers C1-C4 may be of the type taught by Bolt et al. (US 3616,065) but Bolt et al. does not teach the couplers as specifically rigid structures (see Bolt et al., col.2: 30-49 and col.4: 68-72). Williamson (US 6,111,476) teaches that the electromagnetic couplers 30A-N may occupy slots in the backplane (col.3: 6-8). However, the prior art of record—including, e.g., Marketkar et al. (US 2001/0024668 A1) and Knight et al. (WO00/72163 A1)—suggests that the electromagnetic couplers derive functional benefit from being made of flexible circuit board material (see Marketkar et al., paragraph [0047] and lines 1-6 of paragraph [01021; and Knight et al., WO/721 63 A1, first paragraph on p.17 and first paragraph on p.16], and Marketkar et al., in particular, incorporates the flexible coupler into a coupler region (structural opening 715) of socket 700 (Figs. 13-16 and paragraph [0102]). The flexible material allows for mechanical misalignment and imperfection between coupler and backplane circuit board (Knight et al., p.17, first paragraph and p.18, first paragraph), and the flexibility of the material permits various shapes and configurations of the coupler that provide packaging options not available with a rigid material (Marketkar et al., Figs. 13 and 14).

Hence, the above-cited reason for allowance of Claims 23-24.

As to Claims 27-31, patentability resides in a first electromagnetic coupler connected to at least one of the contacts of the connector, in combination with the other limitations of base Claim 27. Marketkar et al (US 20011624868A1) discloses all but one of the limitations of the claim, including a viscous liquid on the first electromagnetic coupler 354 (Figs. 1 3-16; paragraph [0064]), but does not teach the one limitation that the first electromagnetic coupler 354 is connected to at least one of the contacts 750, 760 of socket connector 700; rather, first electromagnetic coupler 354 is held within the coupler region 715 of socket connector 700 to align the electromagnetic coupler 354 with circuit board 300 (Figs. 14-16; paragraphs [0088]-[0090]).

The applicant acknowledges that the examiner has allowed these claims. The applicant notes that there may be other good reasons for patentability of these claims and of other claims.

The fact that the applicant has addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner that have not been addressed. The fact that the applicant has made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims. The fact that the applicant has made claim amendments does not mean that the applicant concedes any of the examiner's positions with respect to those claims.

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Page : 11 of 11

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